

What is claimed is:

1. A field emission display, comprising:
an anode plate where an anode electrode and a fluorescent layer are formed;
a cathode plate where an electron emission source emitting electrons toward
the fluorescent material layer and a gate electrode having a gate hole through which
the electrons travel are formed;
a mesh grid having an electron control hole corresponding to the gate hole
and adhered to the cathode plate, and an insulation layer formed on a surface of the
mesh grid facing the cathode plate; and
spacers provided between the anode plate and the mesh grid so that the
mesh grid can be adhered to the cathode plate due to a negative pressure existing
between the anode plate and the cathode plate.
2. The field emission display of claim 1, wherein the mesh grid is formed
of invar.
3. The field emission display of claim 1, wherein the insulation layer
formed on the mesh grid is a SiO₂ layer formed by printing.
4. The field emission display of claim 2, wherein the insulation layer
formed on the mesh grid is a SiO₂ layer formed by printing.
5. The field emission display of claim 3, wherein the insulation layer
formed on the mesh grid directly contacts a surface of the gate electrode.
6. The field emission display of claim 4, wherein the insulation layer
formed on the mesh grid directly contacts a surface of the gate electrode.
7. A method of manufacturing a field emission display, comprising: the
steps of
(a) preparing an anode plate where an anode electrode and a fluorescent
material layer are formed;

(b) preparing a cathode plate where an electron emission source emitting electrons toward the fluorescent layer and a gate electrode having a gate hole through which the electrons travel are formed;

(c) manufacturing a mesh grid having an electron control hole corresponding to the gate hole so that the mesh grid can be adhered to the cathode plate and an insulation layer is formed on a surface of the mesh grid facing the cathode plate;

(d) arranging the mesh grid on the cathode plate so that the insulation layer on the mesh grid can face the cathode plate; and

(e) interpolating spacers having a predetermined height between the cathode plate and the anode plate and

(f) hermetically sealing the anode plate and the cathode plate.

8. The method of claim 7, wherein the mesh grid is formed of invar.

9. The method of claim 7, wherein the insulation layer is formed by printing a SiO_2 paste on the mesh grid and sintering the SiO_2 paste.

10. The method of claim 8, wherein the insulation layer is formed by printing a SiO_2 paste on the mesh grid and sintering the SiO_2 paste.

11. The method of claim 7, wherein the insulation layer is formed of SiO_2 on the mesh grid.

12. The method of claim 7, the step(c) comprises:
(c1) forming an insulation layer on a surface of a metal plate;
(c2) forming an electron control hole in the metal plate by performing photolithography on the other surface of the metal plate; and
(c3) making the electron control penetrate the insulation layer by removing part of the insulation layer corresponding to the electron control hole.

13. The method of claim 8, the step(c) comprises:
(c1) forming an insulation layer on a surface of a metal plate;

(c2) forming an electron control hole in the metal plate by performing photolithography on the other surface of the metal plate; and
(c3) making the electron control penetrate the insulation layer by removing part of the insulation layer corresponding to the electron control hole.

14. The method of claim 12, the step (c1) comprises:
(c11) coating the metal plate with a SiO₂ paste; and
(c12) sintering the SiO₂ paste printed on the metal plate.

15. The method of claim 13, the step (c1) comprises:
(c11) coating the metal plate with a SiO₂ paste; and
(c12) sintering the SiO₂ paste printed on the metal plate.

16. The method of claim 7, wherein the Step (f) comprises:
(f1) arranging the spacers on the inner surface of the anode plate and fixing the spacers to the anode plate by using binders;
(f2) hardening the binders and sintering the fluorescent layer at the same time by heating the anode plate; and
(f3) coupling the cathode plate and the anode plate so that the spacers can contact the mesh grid and hermetically sealing the coupled body of the cathode plate and the anode plate.

17. The method of claim 8, wherein the Step (f) comprises:
(f1) arranging the spacers on the inner surface of the anode plate and fixing the spacers to the anode plate by using binders;
(f2) hardening the binders and sintering the fluorescent layer at the same time by heating the anode plate; and
(f3) coupling the cathode plate and the anode plate so that the spacers can contact the mesh grid and hermetically sealing the coupled body of the cathode plate and the anode plate.

18. The method of claim 12, wherein the Step (f) comprises:
(f1) arranging the spacers on the inner surface of the anode plate and fixing the spacers to the anode plate by using binders;

(f2) hardening the binders and sintering the fluorescent layer at the same time by heating the anode plate; and

(f3) coupling the cathode plate and the anode plate so that the spacers can contact the mesh grid and hermetically sealing the coupled body of the cathode plate and the anode plate.

19. The method of claim 13, wherein the Step (f) comprises:

(f1) arranging the spacers on the inner surface of the anode plate and fixing the spacers to the anode plate by using binders;

(f2) hardening the binders and sintering the fluorescent layer at the same time by heating the anode plate; and

(f3) coupling the cathode plate and the anode plate so that the spacers can contact the mesh grid and hermetically sealing the coupled body of the cathode plate and the anode plate.

20. The method of claim 14, the Step (f) comprises:

(f1) arranging the spacers on the inner surface of the anode plate and fixing the spacers to the anode plate by using binders;

(f2) hardening the binders and sintering the fluorescent layer at the same time by heating the anode plate; and

(f3) coupling the cathode plate and the anode plate so that the spacers can contact the mesh grid and hermetically sealing the coupled body of the cathode plate and the anode plate.